



Total Connectivity- The 64-bit Future

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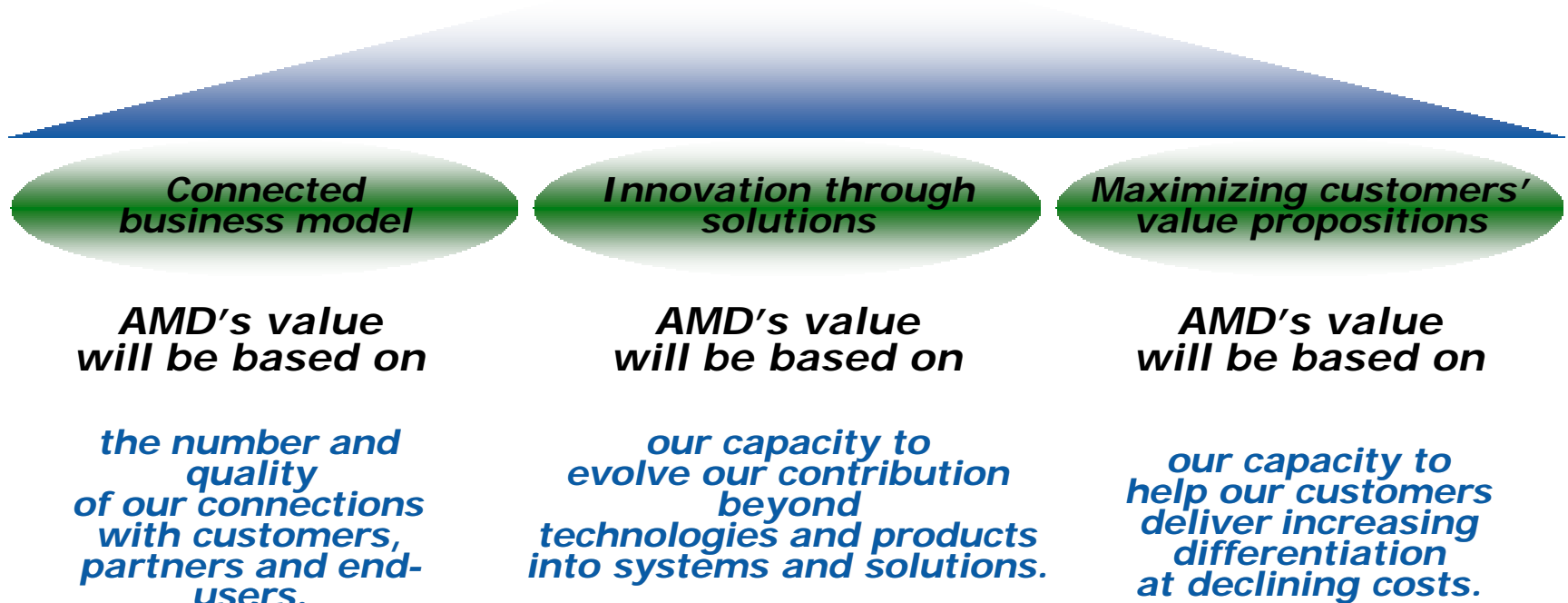
A Totally Connected Enterprise?

- Advancements in compute power must not come at the expense of the customer
- Customer-centric innovation
 - Evolutionary technology
 - Same processor, multiple uses
- Performance today, performance tomorrow

From Vision to Reality

AMD Philosophy

Delivering on the promise of customer-centric innovation:



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Customers are limited by their technology

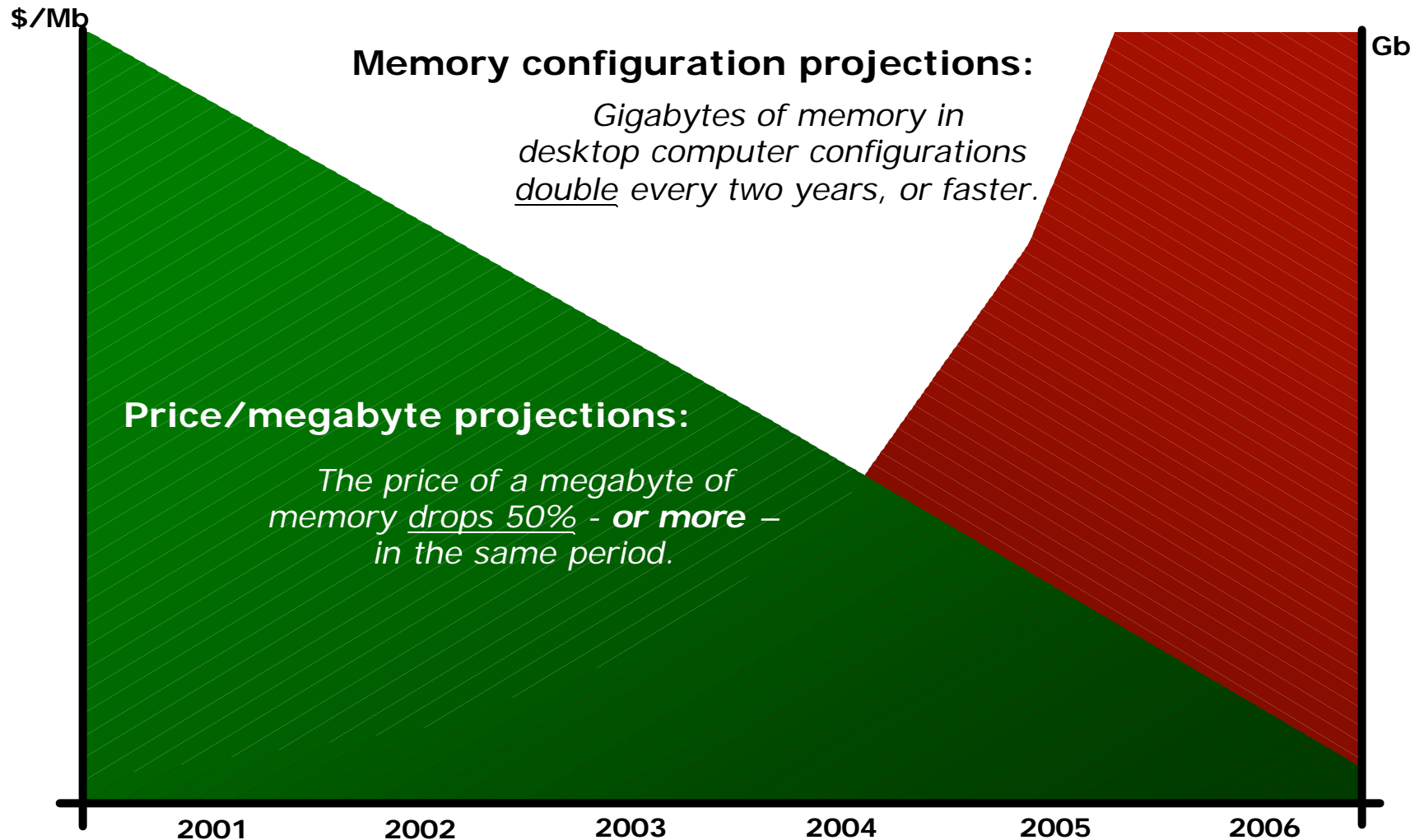
32-bit computers and operating systems cannot typically deliver performance that requires applications to directly access more than 2 to 4 gigabytes of memory.

$$2^{32} = 4GB$$

addressable memory

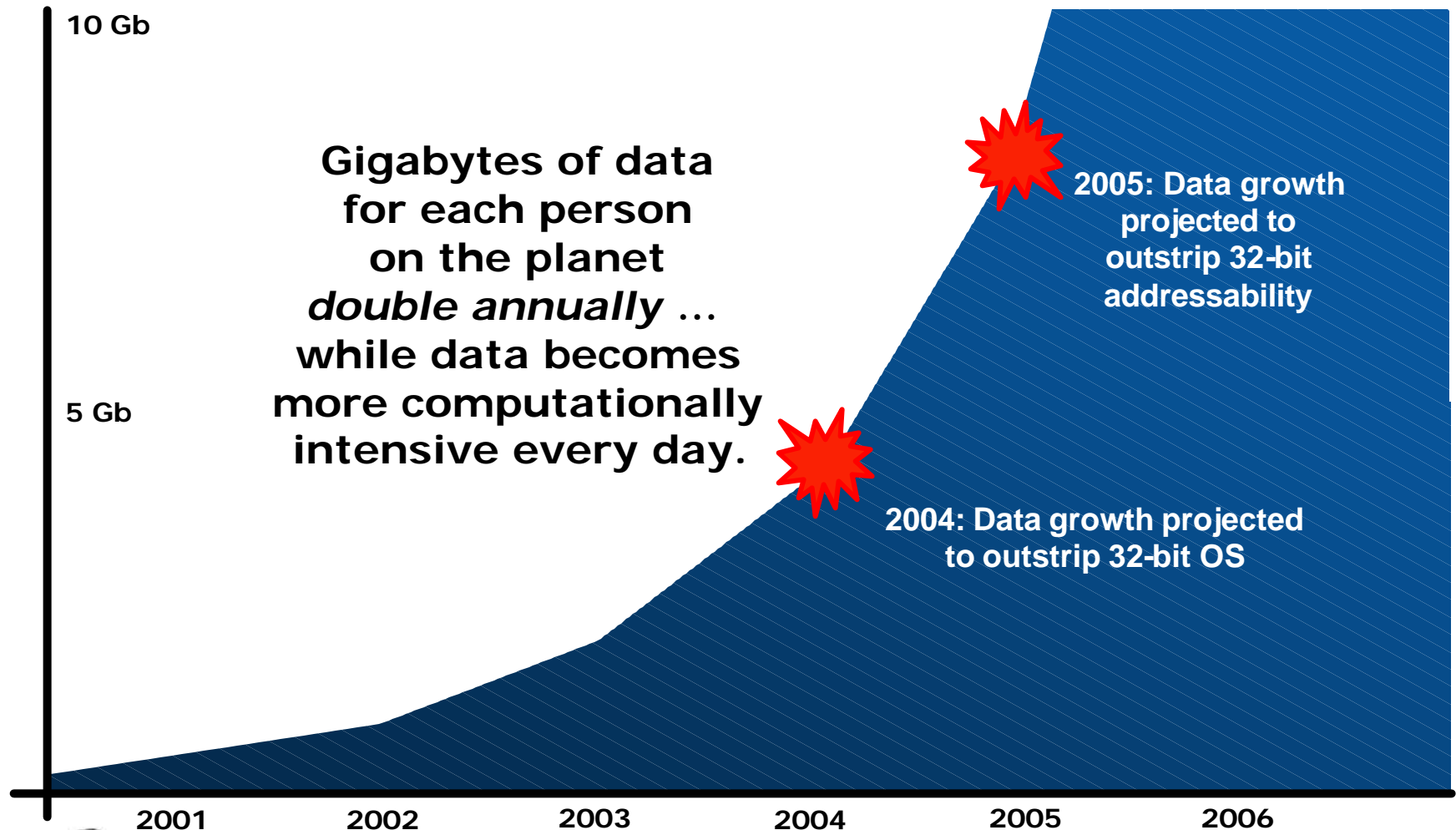
There are *three unstoppable forces* about to meet the immovable object of the 32-bit world.

1. Growing memory configurations

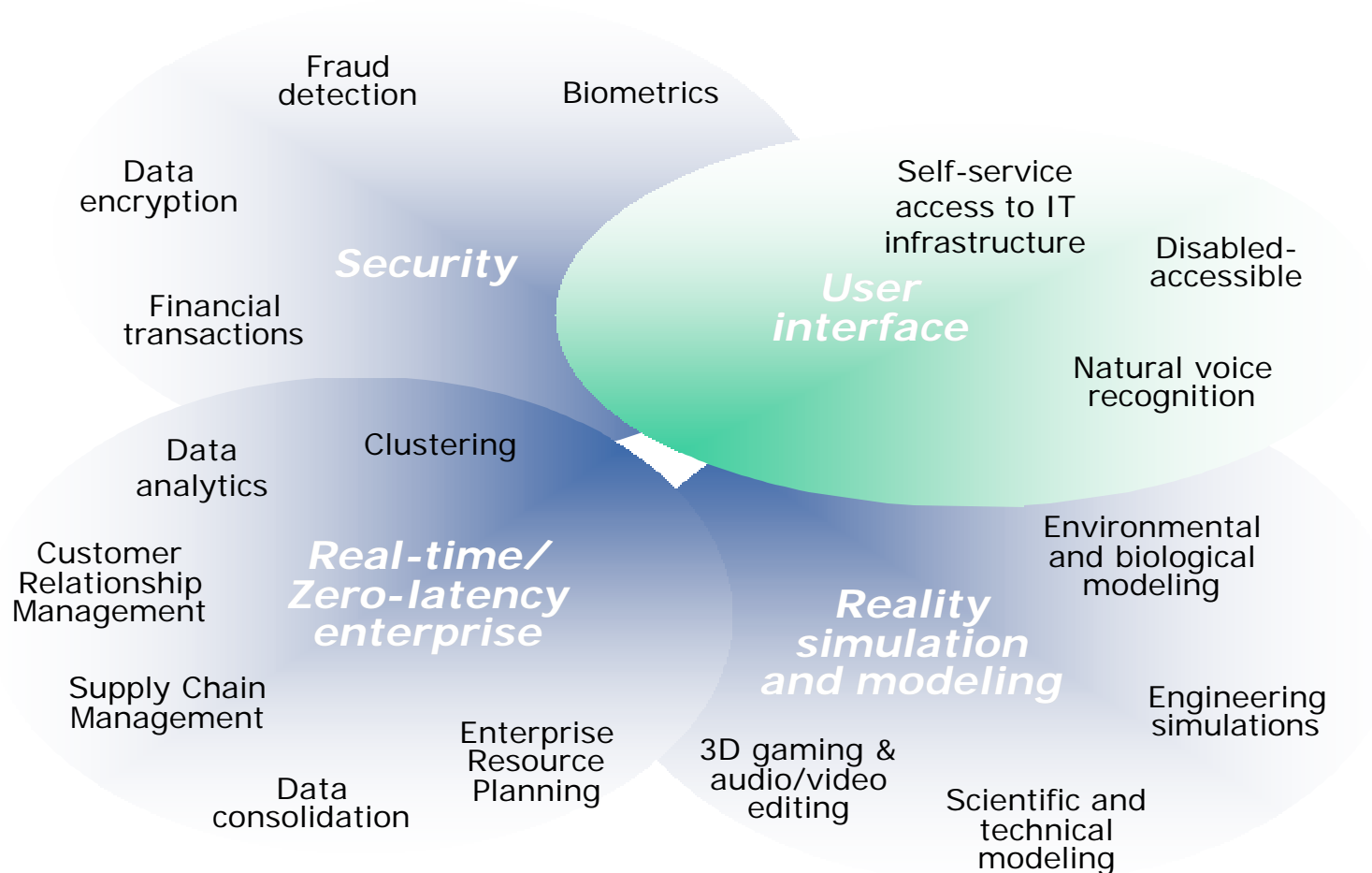


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2. Increasing volume of data



3. More powerful applications

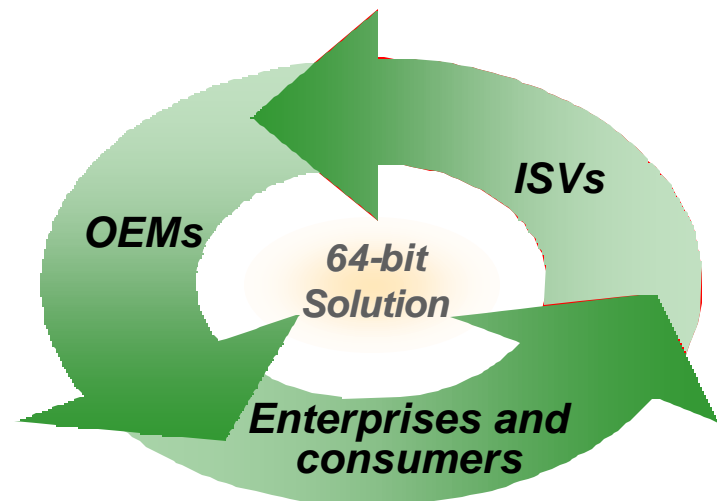


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AMD: A better way of doing business

The 64-bit business model that meets the needs of the *entire* technology community will successfully address these unstoppable forces:

- ✓ *Quick return on investment*
- ✓ *Investment protection*
- ✓ *Open standards*
- ✓ *Economies of scale*
- ✓ *Simplified migration*



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Return on Investment

AMD enables its customers to serve their customers by innovating in open standards, helping to ensure compatibility, and focusing on technology users' demands.

For optimal return on investment, 64-bit computing solutions should:

- ▣ Reduce total costs of development and ownership (TCD/TCO):
 - **Deliver commodity economics**
 - **Reduce development complexity, to get to market faster**
 - **Improve network systems management**
- ▣ Deliver compelling hardware benefits without investing in special or proprietary infrastructure
- ▣ Provide compatible and supported software
- ▣ Require minimal training and support for technology users and IT staff
- ▣ Offer a competitive advantage in exchange for migration

Open Standards

"Analysts say that while the announcements are fairly routine by themselves, the large number of them adds more evidence that the Hammer line is nearing completion. 'There's been a lot of evidence the processors are ready to go...', said Mercury Research's [Dean] McCarron. 'These are things you'd expect to happen before a product is launched.'"

– CNET, "AMD demo hints Hammer in full swing," June 4, 2002

Just some of the companies supporting AMD's 64-bit platform

Windows® OS

- ▣ Microsoft currently developing 64-bit extension to Windows OS

Linux OS

- ▣ Red Hat
- ▣ UnitedLinux
- ▣ MandrakeSoft

Applications

- ▣ Ported DB2 to 64-bit for Linux in 2 days
- ▣ Zeus

BIOS

- ▣ AMI
- ▣ Phoenix Technologies

Chipset

- ▣ ALi Corporation
- ▣ ATI Technologies
- ▣ NVIDIA®
- ▣ SiS Corp.
- ▣ VIA

Clock Generator

- ▣ Cypress
- ▣ Integrated Circuit Systems
- ▣ Texas Instruments

Graphics Vendors

- ▣ 3DLabs
- ▣ ATi
- ▣ Matrox
- ▣ NVIDIA
- ▣ SiS

LPC Flash

- ▣ SST

Memory

- ▣ Micron

Motherboard

- ABIT Computer Corp.
- Acorp
- Albatron
- Aopen
- ASUSTeK Computer Inc.
- Chaintech
- BIOSTAR
- DFI
- ECS
- Epox
- FIC
- Flexus
- GIGABYTE Technology
- Iwill
- Jetway
- Leadtek

Motherboard

- Legend
- Lucky Star
- MSI
- Shuttle
- Soltek
- SOYO

Phase Locked Loop

- Nurlogic

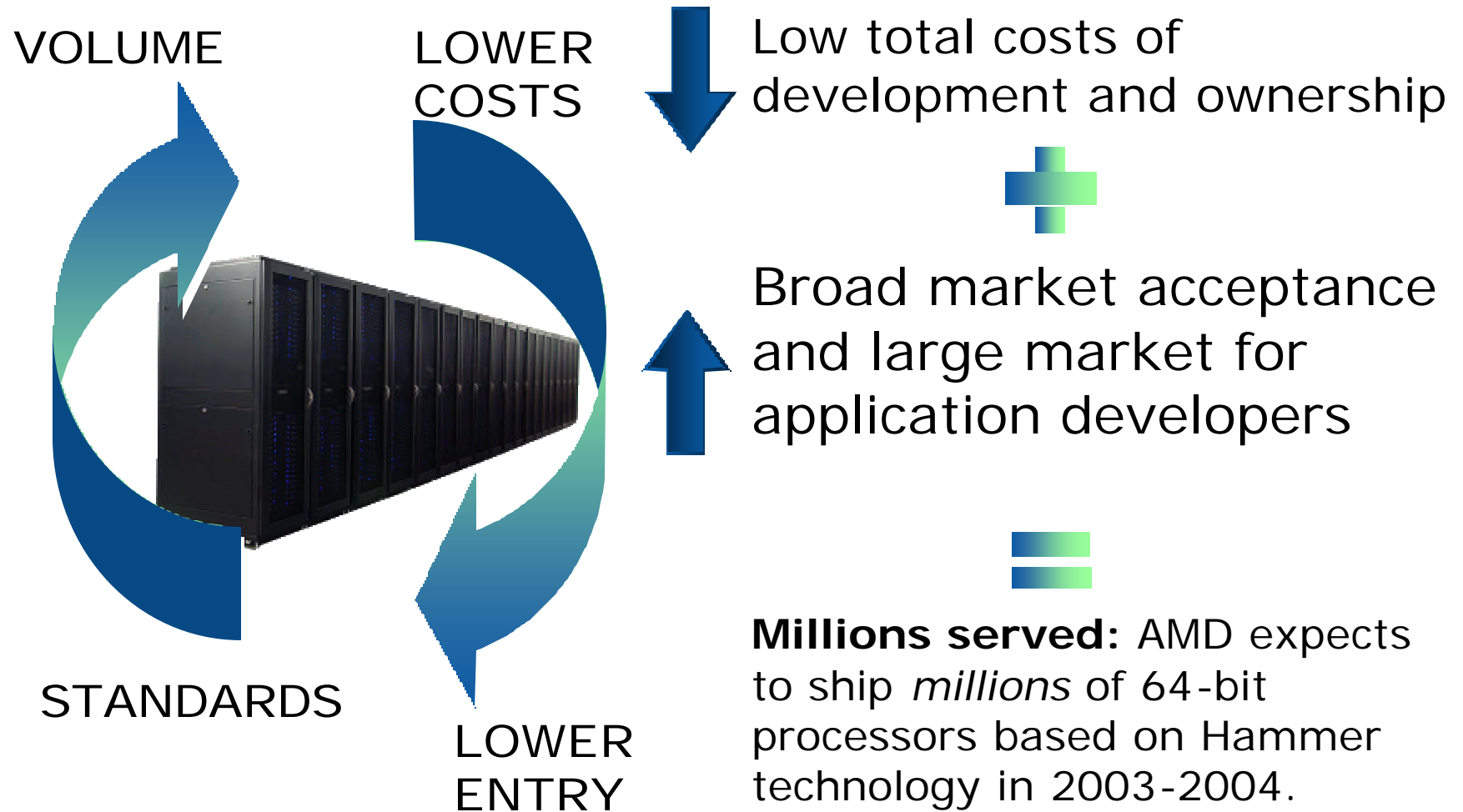
Socket

- Foxconn
- Molex Incorporated
- TYCO

Voltage Regulators

- O2Micro
- Intersil

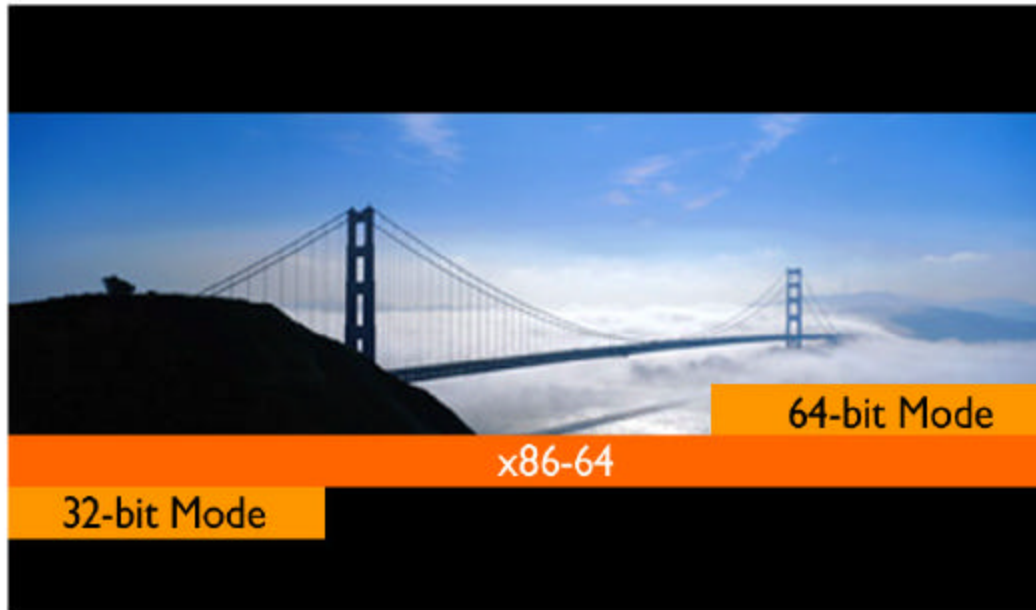
Economies of Scale



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Simplified Migration

A compelling case for migration:



- ▣ Few, if any, changes required for existing software:
 - ▣ Minimal recompiling needed to optimize performance of the 32-bit installed software base
 - ▣ Only applications that require 64-bits need to be ported
- ▣ 100% backward-compatible: Current 32-bit applications will work on today's 32-bit operating systems and tomorrow's 64-bit operating systems
- ▣ Doesn't require special hardware or investment in a proprietary infrastructure
- ▣ Migration to 64-bit computing at user's own pace

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The Solution:

AMD's microprocessors based on Hammer technology

- ▣ **Designed to optimize 32-bit performance for immediate ROI**
 - ▣ Integrated Memory Controller
 - ▣ Latency reduced by half over conventional northbridge design
 - ▣ Latency continues to shrink as processor frequency increases
 - ▣ Capability for faster memory
 - ▣ HyperTransport™ technology accelerates data processing
 - ▣ Processor core based on Hammer technology delivers application performance improvements
- ▣ **Compelling 64-bit performance and 32-bit investment protection**
 - ▣ x86-64 instruction set architecture – proven and stable industry standard
 - ▣ Customers to choose when and how to migrate to 64-bit applications
 - ▣ Translate 32-bit economies of scale to 64-bit computing
 - ▣ Headroom with performance scalability
- ▣ **Easy implementation and migration**
 - ▣ Open standards create competitive choices
 - ▣ Reduced complexity simplifies implementation, maintenance, and upgrades for lower TCD/TCO
- ▣ **AMD designed its Hammer technology to provide a foundation for market-specific solutions:**
 - ▣ Desktop, mobile, workstation, and server uni-processors
 - ▣ Workstation and server multi-processors
 - ▣ Enterprise server multi-processors

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